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BUDGETING PROCESS – THE CASE OF *IMPrensa NACIONAL-CASA DA MOEDA*

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ABSTRACT

Traditional budgeting is almost universally performed, but criticism has been increasing and alternative methods emerging. As the usefulness of budgeting depends on an organization's business and people, a case-study was conducted. This work project aimed to describe and to analyze the budgeting process at *Imprensa Nacional-Casa da Moeda*. The research revealed that its current system cannot be defined as traditional budgeting, since its organizational structure is not totally centralized. Moreover, the results indicated that no alternative budgeting technique could be used, even though the current procedures could be improved within the limitations of being a public limited company.

Key Words: Budgeting, Planning, Financial Control, Beyond Budgeting

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I. INTRODUCTION

Budgeting is considered to be one of the eternal colossuses in accounting. It creates several advantages, especially in financial control. Essentially, it establishes objectives for revenue turnover and constraints on expenses, being those targets further monitored over the following fiscal year and corresponding variances to actual values examined (Bruns and Waterhouse, 1975). However, budgeting contains several weaknesses. Most of the criticism is founded on the premise that it is a hazard for the companies to react quickly to any unexpected change in the market (Bunce *et al.*, 1995). Over the last decades, the criticism has increased to the point that this tool must be abolished altogether and be replaced by an alternative method, named Beyond Budgeting (Hope and Fraser, 2003a). Although budgeting is imperfect, it is important for it not to be labeled as a relic of the past, as so many researchers do. In fact, if it would not help the organization's day-to-day business, it would not be used already for a long time.

This work project (WP) aims to understand, describe, and analyze the budgeting process of *Imprensa Nacional-Casa da Moeda* (INCM), a Portuguese public limited company that produces goods and provide services crucial for the operation of the Portuguese Government. Hence, the research method used for this WP was a case-study, in which the researcher played a participant role while doing an internship in the company (Ryan *et al.*, 2002; Yin, 2014). With a theoretical framework executed on traditional budgeting and the research problem identified, the following research questions were posed: (1) "How is the budgeting process carried out in a Portuguese manufacturing company?"; and (2) "Could the case company's current budgeting system be improved?".

This WP is comprised of five-sections. The second section handles the theoretical framework, which is followed by the discussion of the research methodology in section three. The case-study proceeds with the empirical part that analyzes the current budgeting process of the case company in section four. The WP ends with conclusions and suggestions for further research.

II. LITERATURE REVIEW

Traditional Budgeting

The management model through budgeting emerged during the 1920s with the aim of supporting directors on controlling costs and cash flows of big business units (CIMA, 2007). Over time, the traditional budgeting has become the foremost pilot for businesses, while organizations rely on more complex activities (Johnson and Kaplan, 1987).

According to Garrison *et al.* (2003), budgets coordinate the activities of an entire organization. Their core function is to stand as a control system for management (Eckholm and Wallin, 2000; Libby and Lindsay, 2010). Besides the controlling purpose, which allows an organization to understand how close its real results are from the ones budgeted for a certain period (Frezatti, 2008), the budgeting might be defined as being the quantitative measure of a future action plan to be followed in the forthcoming period (Bhimani *et al.*, 2008; Horngren *et al.*, 2004; Horngren *et al.*, 2015). In short, as suggested by Bio (1988) the budget must feature two activities: planning and controlling. In addition to planning and controlling, Rickards (2006) believes that the main role of budgets is to help the organization's strategy implementation. Thus, the budget must incorporate the company's strategic objectives, allowing the monitoring of those objectives' progress. Bio (1988) states that the required information for the budget derives from external (e.g. political, legal, economic trends, competition, etc.) and internal factors (e.g. historic revenues and expenses, installed capacity, cash flows, etc.). The internal information is commonly provided by the accounting department, while the external issues are collected from several sources. Both foundations must integrate an information system suitable for companies' decision-making.

Drury (2008) lists six main purposes of traditional budgeting: (1) planning annual operations in different scenarios and anticipating problems that may arise; (2) coordinating activities of the various departments of the organization and ensuring their agreement with one another to

avoid benefiting only certain units instead of the whole organization; (3) communicating the plans to the several managers making sure that everyone understands their role towards the annual budget; (4) motivating managers to attain challenging targets and goals incorporated in the budget; (5) controlling activities by comparing the actual and the budgeted results to further implement corrective measures on significant deviations; (6) evaluating the performance of the management in accomplishing targets that have been previously established. Raghunandan *et al.* (2012) have supported the idea initially developed by Campbell (1985), where both technical (numerical computations of projected expenses) and behavioral (the use of individuals to attain the technical part of budgeting) aspects must be considered during the process of budgeting if goals and objectives are to be achieved. Since the behavioral element cannot be disintegrated from the budgeting exercise, each organization has a different approach on this process depending on how the management deals with its employees. Raghunandan *et al.* (2012) list three different approaches when preparing budgets: (1) imposed budget – a despotic leadership where the first line management is merely responsible for executing a budget exclusively prepared by the top management; (2) participative budget – a democratic leadership in which the lower management contributes to the budgeting by integrating sub-unit budgets into the master one; (3) negotiated budget – the responsibility of preparing the budget is spread among all parties, observing a combination of both imposed and participative styles. Bratton and Gold (2007) emphasize that the employee contribution and involvement within the company's processes is beneficial for the organization. Therefore, it is suitable to state that an active participation of the managers and employees on the budgetary process is crucial, since the workers must be committed and harmonized with the ideals of both the budgets and the company's objectives. When choosing one of the traditional budgeting approaches discussed above, an organization is influenced by organizational structure and internal procedures' complexity (Reeve *et al.*, 2008).

According to Horngren *et al.* (2015), companies prepare budgets in order to establish specific objectives, which can be compared with real results. The comparison is then followed by an evaluation of the variances between real and budgeted results and consequently, if required, appropriate corrections. Throughout the process of budgeting, managers must consider future macroeconomic prospects, as well as past sales patterns and competitors' actions. Garrison *et al.* (2003) discuss several benefits of budgeting: 1) it is a way to communicate the strategic models and objectives, established by the board, to the entire organization; 2) it outlines the managers' responsibilities, forcing them to act accordingly; 3) it provides targets for performance assessment; 4) it is a way of allocating resources in the most efficient way; 5) it helps the coordination of the areas within the company to attain the company's objectives.

During the last decades, the dissatisfaction on traditional budgeting has boosted. More than three decades ago, Welsch (1983) mentioned four drawbacks about budgeting that could be timeless: (1) the budgeted results are based on estimates which, if not sustained by realistic basis, the budget may become a complete failure; (2) the procedures of planning and controlling must be constantly adjusted to the circumstances, since they might become useless; 3) it is important that the employees who plan the budget agree with the company's objectives; (4) the budget must not substitute managers since there are functions not included.

Neely *et al.* (2003) present an extensive set of weaknesses associated with traditional budgeting. Budgets are costly to develop, partially because they are time-consuming. The process involved is rarely focused on strategy and value creation, rather it concentrates primarily on the reduction of costs. Since traditional budgeting focus exclusively on the financial performance, there might exist conflicts with operational and strategic decisions (Merchant, 1985). Due to the infrequency of its development, usually yearly, and the bureaucratic and vertical structures involved, there is a lack of flexibility by the firm to act creatively and wisely at the right time. This argument is in agreement with what Wallender

(1999) has also stated, which is that the traditional budgets will never be valid because their predictions are not able to capture all the uncertainty in ever-changing environments. According to Samuelson (2000), budgets become less useful whenever the market volatility – where the companies operate – increase. Moreover, the controlling function can create a dysfunctional behavior on lower management (budget games) due to pressure on achieving targets. Concerning these budget games, Jensen (2003) recommends not to use budgets as a rewarding system. The author believes that rewarding managers for accomplishing goals and punishing them whenever those targets are not met harms the whole organization's integrity. Kaplan and Norton (2000) conclude that the lack of relationship between the budgeting process and the companies' strategic goals, is a huge flaw frequently committed. Rickards (2006), and most recently Goode and Malik (2011), state that traditional budgeting is no longer fulfilling the organizations' requirements with the modern business environment at stake. The first signals of dissatisfaction of companies with their budgeting systems was noted by the end of the 90s. Banham (1999) conducted a European inquiry, where 88% of the respondents expressed their disagreement with traditional budgeting. According to Hansen *et al.* (2003), by that time, this frustration resulted in two different reactions depending on the company: either to improve the budgeting process or to abandon the budgeting entirely. As a response to those dissatisfactions, alternative methods have been developed. Among several approaches, the main alternatives provided by the literature are "Beyond Budgeting" and "Better Budgeting". The former approach aims to, with revolutionary changes, put away traditional budgeting altogether, while the latter simply purposes constructive improvements. Neely *et al.* (2003) describe the five techniques involved in Better Budgeting aimed to overcome the flaws of the traditional method: 1) Activity-Based Budgeting (ABB) - planning and controlling using value-added processes, related to activity-based costing and activity-based management; 2) Zero-Based Budgeting (ZBB) – budgets must be yearly justified with

realistic assumptions, instead of relying on previous periods; 3) Value-Based Management (VBM) – planning and budgeting linked with strategy and shareholder value creation; 4) Profit Planning – preparing future financial plans considering both short and long term predictions; 5) Rolling Budgets and Forecasts – budgets are developed frequently, resulting in more precise projections. Since Better Budgeting is a vast, meticulous and time-consuming process to be efficiently developed, it may cause a greater dissatisfaction on companies.

Beyond Budgeting – Alternative Budgeting Technique

In 1998, the Beyond Budgeting Roundtable (BBRT) was founded in the UK – although members from Europe, USA, Australia, and South Africa had already joined it –, in which the main boosters were Jeremy Hope and Robin Fraser. This organization is composed by a group of companies from diverse industries and contexts, with the main objective to discuss the increasing dissatisfaction of the traditional budgeting and the likely implementation of the Beyond Budgeting model. In fact, this member-based network aims to improve planning and control practices, and eventually an organization's whole performance.

Hope and Fraser (2003a) state the importance of flexibility by the companies in moments of unpredictability. These authors believe that the management model used by the companies over the Industrial Age should be shifted to successfully compete in this most recent era, the Information Age. Daum (2002) emphasizes that this new business environment differs enormously from the 1920s, featuring complex and innovative activities, and also employee retention ability. This author also states that, although in the former Age companies were concerned about cost reduction reaching scale economies in mass production, in a dynamic business environment, as nowadays, managers must be fostering expansion, exceed targets, excellence, efficiency, and service quality for the clients. During this Information Era, product life-cycles are shorter, and consumers have become more informed and confronted with more options within the market. However, since budgets cannot be reformed, there is the possibility

that their objectives become outdated. In addition, Hope and Fraser (2003a) mention that the traditional budgeting is unable to deal with such uncertainties. Although budgets have progressed to adapt to these realities, the criticism has been increasing. Beyond Budgeting emerges to respond to an ever-changing organizational environment. This method meets the companies' needs, affording quick and flexible decisions (Lunkes, 2009).

The main principle of Beyond Budgeting (BB) is to abandon traditional budgeting altogether, which is used by several companies worldwide. Instead, companies must rely on both financial and non-financial measures derived from external benchmarks and competitors rather than internal targets (Hope and Fraser, 2003a). These authors discuss the fact that managers are no longer imprisoned to what has been originally determined, relying on repeatedly revised targets and goals - against competitors, benchmarks, and previous periods – in place of the fixed annual budgets and plans. In that way, the management model becomes more flexible, by shifting its focus from detailed plans to trend analysis and rolling forecasts (typically every three months). Moreover, Hope (2004), in an interview, also states that BB constitutes an alternative and more adaptable management model, in which centralized and hierarchical structures change to become decentralized and more flexible. Padoveze and Taranto (2009) reinforce that relative targets must be negotiated between top managers and first-line managers. According to Hope (2003), giving authority, decision-making and responsibility to the first-line managers, results in an increase of productivity and motivation leading to better services provided to the clients. Therefore, BB seems to be a good alternative to Traditional Budgeting, since it allows companies to strengthen relationships with their clients. According to Beyond Budgeting doctrine, the companies that implement this model abandon a fixed performance contract (based in fixed targets and fixed incentives) and move to a relative performance contract, challenging the coworkers to surpass records, beat the competition, or perform better than previous periods (Hope and Fraser, 2003a).

Traditional Budgeting vs Beyond Budgeting

There are several examples in the literature of the Beyond Budgeting system being successfully implemented. Hope and Fraser (2003a) discussed *Handelsbanken*, a Swedish bank founded in 1871, which abandoned all forms of traditional budgeting during the 1970s and has delivered an extraordinary return to the shareholders since then. This bank has been overcoming all its competitors in Europe, stating that the decentralization of the company has been the major cause of such a successful performance. This decentralized structure was fostered by enabling every division to run as an autonomous profit center. As a matter of fact, nowadays, half of its collaborators can decide whether to provide loans or not.

Although these examples are illustrative of a good tendency towards the use of BB, Goode and Malik (2011) believe that it is still in a premature phase of development and usage. In fact, the results of a research developed by Libby and Lindsay (2010) suggest that traditional budgeting is not likely to be abandoned in the near future due to the significant value created; instead, companies are only keen to improve their existing budgeting systems. Additionally, over the same year, Eckholm and Wallin (2000) reinforce the idea that although annual budgeting has lost its utility and become outdated, it is not dead yet.

With the presented discussion, BB seems to have plenty of benefits, however it is not out of criticism. According to CIMA (2007), a business without a prepared budget will not be able to plan, control and coordinate its activities, which is regarded as important to frame the current situation and establish future targets. Moreover, Goode and Malik (2011) state that a decentralized hierarchy may be impossible for several corporations and such extreme change may not be well perceived by the employees, resulting in disappointment. To support this idea, Pilkington and Crowther (2007) found that strict budgets are commonly executed by small firms while BB is typically adopted by large firms employing over one thousand individuals. Also, the governance style influences the decision for the most suitable method.

III. METHODOLOGY

This work project (WP) adopts case study research drawing on a qualitative methodology. Given the objective set for this WP of describing the budgetary practices followed by INCM, a descriptive case study was conducted. According to Yin (2014), case studies are appropriate when the researcher is studying a complex contemporary phenomenon and when ‘how’ and ‘why’ questions have been set, as it is the case of this investigation. The following questions were posed: (1) “How is the budgeting process carried out in a Portuguese manufacturing company?”; and (2) “Could the case company’s current budgeting system be improved?”.

In order to answer the research questions, the budgeting process of INCM was analysed and uncovered likely gaps on those procedures, so that opportunities to improve the models and the practices could be identified. The case study was developed at the INCM premises, more precisely within the Planning and Management Control Direction (DPC) of the company, from October to December of 2017. DPC is the organizational unit responsible for budgeting the company’s operations. It holds the planning and controlling functions of the budgeting process, while providing strategic support and institutional performance monitoring to the board of directors. Moreover, the unit must prepare and send the outputs from those two functions to the shareholder. Lastly, it identifies and implements any certification processes considered as strategic for INCM. Relying on the range of possibilities that Ryan *et al.* (2002) suggest, the researcher’s role was that of a participant, integrating an internship program at DPC. Acting as a participant helped on getting useful information for the case study, due to the involvement in the day-to-day work of the company. In the meantime, it was essential to acknowledge some of the features of the German management software SAP, which is used by INCM to store accounting data and to manage its operations.

According to the literature (Ryan *et al.*, 2002; Yin, 2014), three interactive steps must be followed when carrying out a case study: (i) collecting evidence, (ii) analysing evidence, and

(iii) writing up the WP. Below it follows a description on how these steps were performed.

Collecting Evidence

To afford a broad examination of the research phenomenon, the case evidence was collected from various primary and secondary sources, so that the researcher could triangulate data (Ryan *et al.*, 2002; Yin, 2014). Those sources of evidence included the following: (i) artefacts (obtained from INCM's website and intranet); (ii) written documents (mainly, reports from related to the budgeting procedures, named 'Approach to the Planning Process', 'Planning Schedule of 2017' – Appendix 1 –, and 'Strategic Plan for 2018-2020'); (iii) semi-structured interviews and informal debates with managers and senior technicians; and (iv) observation.

Four interviews (which were tape-recorded) were conducted with a manager from DPC (interviewee 1), a senior technician from DPC (interviewee 2), a manager from the Commercial and Marketing Unit (DCM) (interviewee 3), and a manager from the planning department of a business unit (Security Printing Unit) (interviewee 4). Interviews took place from October 2017 to November 2017 and are disclosed in the Appendix 2, with the exception of the interviews with interviewees 2 and 4 that did not allow to be tape-recorded nor disclosed in this WP. The questions asked, depending on the interviewee, covered topics such as: the budgeting approach adopted by the company, usefulness and limitations of the budgeting system currently employed, and suggested improvements to this system. As an employee of the company with daily interaction with the management, it was easier to get the required interviews, and to get the interviewees to speak freely on the subject.

Analysing Evidence

Concerning the assessment of evidence, it was crucial to adopt appropriate and reliable research procedures and methods, known as procedural reliability (Ryan *et al.*, 2002). Moreover, this case-study also relied on a research design to connect the data collected and the conclusions to be drawn (Yin, 2014). Additionally, for this qualitative research, the

internal validity criteria, ideally used for quantitative research, is replaced by the concept of contextual validity (Ryan *et al.*, 2002). As a way to ensure contextual validity of the process, data triangulation was used which is a means of assuring quality on the evidence.

Evidence was analysed based on the identification of common patterns and repetitions following Yin's (2014) and Ryan *et al.* (2002) recommendations. As it is normal when adopting case study research, statistical generalization was not aimed. In fact, the research purpose was not looking into the budgetary practices of a sample of companies but rather to shed light into the budgeting process of a specific organization.

Writing Up the WP

With the previous steps completed, together with the literature assessed, it was proceeded by the writing of the case-study research. "This is a creative and literacy act, and, as such, the case researcher is the author-writer of the case study." (Ryan *et al.* 2002, 157).

It is important to mention that the company and budgeting descriptions in the empirical study were predominantly grounded on direct observation, on the interviews with interviewee 1 and interviewee 2, as well as on the provided internal documents in parallel with the company's website. On the other hand, the analysis on the budgetary process mostly relied on all the interviews, complemented with direct observation of the procedures.

IV. THE EMPIRICAL STUDY

The Case Company

INCM is the merging result between two centenary companies in 1972: *Imprensa Nacional* (The Official Printing Office), founded in 1768, and *Casa da Moeda* (Portuguese Mint), with the first known reference in the 13th century.

INCM is legally designated as a public limited company (PLC), as it is owned by the Portuguese Government and administratively subordinated by the Portuguese Ministry of Finance. It is governed by the regulations applied to limited companies, by its statutes, and by

unique regulations applied to the company's purpose. Moreover, INCM is also governed in coordination with the strategic policies ruled by the Portuguese Government and *Parública*¹. In September 2017, INCM was composed by 654 employees (see Appendix 3).

Since December of 2014, the corporate governance comprises a general assembly, a board of directors, a board of auditors and an official accounts auditor. Alongside this, in 2015, the board of directors approved a restructuring process towards the INCM organizational model, which created three different types of organizational units (see Appendix 4) to better adjust the company to new challenges: (1) Business Units – responsible for planning, managing and operating the corresponding products/services life-cycle; (2) Support Functions – responsible for providing services across all the organizational units; (3) Corporate Centre Functions – responsible for planning and developing services to enhance strategically the organization.

INCM has a mission that allows, namely, “to create, produce and supply goods and services that require high security standards, focused on the customer and on innovative solutions”.²

The company is responsible for producing goods and providing services crucial for the Portuguese Government operation, as the coinage and the edition of official publications. It is important to mention that about half of the revenues derive from three major products (Portuguese Citizen Card, Portuguese Passports, and Currency) and spread by four major clients (IRN, DGTF, SEF, and Ministry of Finance). However, these products are subject to governmental decisions/needs, which represents a huge risk for the company's revenues due to the high volatility on legislative changes.

Description of the Budgeting Process

INCM prepares its financial accounting (FA) internally in the Financial Unit (DFI) and follows all the norms required (IFRS). It also holds a management accounting (MA) system

¹ *Parública*, officially nominated as *Participações Públicas (SGPS) S.A.*, is a Government holding company and can be defined as a National Health Fund of the Portuguese Republic.

² INCM website

focused in business segments, which breaks down the whole information into the four business units and the remaining activity of the company that is not directly related with the business units. MA is indispensable for the company, as a way to better control and monetize its activity for each single business unit, or in more detail each product of its portfolio, which is not comprised by FA. For both accounting functions, the company mostly relies on the management software SAP and on Excel to groom all financial information.

The INCM's budgeting process usually starts in August of the current year, with the board of directors approving the calendar for the planning process. By that time, a workshop is also developed to start the planning process with the board of directors and all the managers of each organizational unit. It is important to understand that every year the budgeting process is done for a three-year span, as required for every public limited company by *Direção-Geral do Tesouro e Finanças* (DGTF), which is the governmental entity responsible for the regulation of the financial situation of the *Sector Empresarial do Estado* (SEE)³, among other functions.

Planning

The planning process embraces the preparation of three different plans: Strategic Plan (PE); Activities and Businesses Plan (PAN); and Activities and Budgeting Plan (PAO). Thus, the very first stage of planning, performed by DPC, is to make the complete activities' scheduling, establishing the start date and the length for each task to execute those plans. Although the dates are informed to every unit, which means that they should be self-responsible to accomplish it, many times DPC must warn and question the course of those tasks since there is a certain degree of dependency between some of them. In this way, although DPC is not responsible for developing all the tasks, it takes a regulatory role.

³ SEE is integrated on the Portuguese business public sector and it is made up of all the productive units of the State, structured and managed in a corporate way. It combines both public companies and investees.

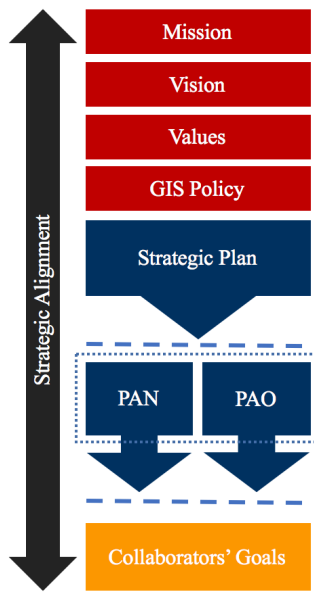


Figure 1 - Strategic Alignment
(Source: Strategic Plan for 18-20)

The company finds it crucial to associate its strategy throughout the planning. The process of the strategy alignment is in cascade (represented in figure 1), which ends on assigning individual goals for the employees.

The PE for the triennium is the base to define the PAN of the company, translating the organizational strategy into operating targets and short-run activities to be attained by all the organizational units. This plan incorporates a strategic analysis, which begins with a macroeconomic context and some macroeconomic data, usually provided by *Banco de Portugal*⁴. It is worth noting that INCM operations are bounded by the Portuguese economic/financial environment. Due to the fact that the company is state owned, and being aware of the governmental policies towards the national budgetary consolidation and external debt adjustment, it is continuously constrained by instructions provided for SEE. For that reason, an extensive analysis of the Portuguese Government' Budgetary Plan for the following fiscal year is mandatory. Then the Commercial and Marketing Unit (DCM) carries out an assessment about the development prospects of the markets where INCM operates, through the evaluation of the main trends for its four business areas. Subsequently, in order to define specific objectives for improvement actions, the strategic analysis goes through an assessment of the previous years' evolution of several business features. At the end, when defining the strategic objectives, the company has also to rely on guidelines established by distinctive parties: the shareholder (*Parública*), legal entities, the board of directors. Everything is “cooked” and the strategic goals are set.

PAN is a document in which is done the analysis of the businesses of INCM and the planning of the activities of the several organizational units. In this document, the operating objectives

⁴ Central bank of the Portuguese Republic

are established, as well as new projects. Moreover, this document also quantifies and schedules all the activities for the forthcoming operating period, while relying on the strategic path established in the PE. Every organizational unit must define its objectives, based on the strategic targets established. Moreover, since 2016, INCM has relied on the four Balanced Scorecard (BSC) perspectives – (i) financial perspective; (ii) customer perspective; (iii) internal process perspective; (iv) learning and growth perspective – to allow each unit to have a broader set of objectives, and respective indicators, on its specific area. Although INCM does not build a BSC model yet – aimed to be implemented in the short-term –, the units are getting used to the process by setting objectives to the perspectives assumed in the model.

Every year, by the time INCM is preparing the PE and the PAN, the company evaluates, in a structured way, all the risks and uncertainties that its activity is facing, in order to create effective mechanisms to empower the business sustainability. Within this context, in order to assist and guide every organizational unit when designing their own strategies and planning their activity, a SWOT analysis is developed (see Appendix 5 about the SWOT Analysis for 2018) for consolidating the whole analysis that has been previously done about the company's current situation. Intended to be a tool for analyzing the internal and external circumstances that an organization is facing, the company is able to take advantage of its strengths, overcome its weaknesses, and convert threats into opportunities.

According to interviewee 1, usually between September and October, the organizational units send a proposal of the operating goals. These proposals are to be discussed with each unit, individually, to measure their feasibility and to identify whether those objectives are very or little ambitious. As acknowledged by the company in the past, the units tend to determine low objectives and the board of directors, together with DPC, will try to boost it. After the maps of objectives are settled, four of them are elected, for each unit, which will be used to assess the performance of the representative collaborators of that area. The employees' performance

evaluation measurement in INCM, also discussed by interviewee 1, is sustained in three different layers (see Appendix 6): (1) strategic objectives, (2) operating objectives, and (3) individual objectives. The weight of those layers will vary according to the employee's professional category. Individual goals will be established by the manager responsible for its department, together with every single subordinator, in order to meet the department's operating objectives. On the other hand, the performance of the members of the board of directors will be evaluated based on the goals established in the contract with the shareholder. The PE, and consequently the PAN, is also to be integrated into PAO, aiming that the whole planning process meets the Portuguese economic/financial situation, as well as the constraints set for the activity of the companies of SEE. PAO is a document which quantifies the planning of the future activity of the company and the corresponding forecasted financial results. As a matter of standardization, the company assumes several assumptions for the three year-forecasts, such as the corresponding inflation rates (assessed during the strategic plan), the employees' absenteeism rate, and the yearly working days. These forecasts must be monthly for the first year and yearly for the two subsequent years. PAO is divided into several activities: (1) Preliminary tasks; (2) sales plan; (3) fixed assets plan; (4) hourly rates; (5) production plan; (6) personnel costs plan (training included); (5) maintenance plan; (6) purchases plan; (7) cost reductions plan; (8) miscellaneous costs⁵, depreciations and amortizations, and other operating expenses/revenues plan; and (9) financial statements preparation. Although it is crucial to group the activities in order to organize and control all the tasks that are required to be accomplished over the entire process, it is important noting that its completion does not follow any sequence based on the groups structure. Preliminary tasks are those that must be done to start the budgeting process (interviewee 2). For example, DPC must prepare Excel and Word templates that will be posteriorly sent to the remaining

⁵ The concept of *Fornecimentos e Serviços Externos (FSE)* in Portuguese will be regarded as miscellaneous costs for the purpose of this WP.

areas. As explained before, every year the company prepares three-year forecasts with all that information being inserted on SAP. Hence, DPC must clean all the data from those two years that will also be forecasted in the current year. For example, in 2017 the company forecasts the period 2018-2020; however, because SAP already contains the data of 2018 and 2019 which was planned in 2016, the data has to be updated in 2017.

The sales plan, usually the first forecasted data delivered by the areas, starts by sending templates to the DCM, the Publications Unit (UPB), the Assay Unit (UCO) and the Procurement Unit (DCP), and deadlines are established to be delivered by those organizational units, similar to what happens in every step during the planning process. These templates intend to gather information towards expected units sold, selling prices, discounts, sales' offers, and sale of scraps. The data will be inserted in SAP, whenever the board of directors agrees with the projected total amount of revenues. The last step on the sales plan will be the valorisation of the cost of sales, which requires the calculation of the standard costs for the products to be produced in the forthcoming years. The estimate of the standard costs is a meticulous process, which depends on several inputs, such as hourly rates, bills of materials (BOMs), routings, and future prices of raw materials. For the standard cost purpose, it is only considered the costs directly involved in the production process.

Interviewee 2 stated that the hourly rates are composed by both man-hour and machine-hour rates⁶. These rates, computed by DFI, require information on one side about remunerations and labour hours for man-hour rates, and on the other side about fixed assets' amortizations and corresponding installed capacity for machine-hour rates. The Human Resources Unit (DRH) is responsible for forecasting all the personnel costs for the triennium and also reviewing the list of employees. Then, this unit must provide the updated list of employees and also the total amount of personnel costs – training expenses included – to DFI, for the

⁶ Man-hour rate = $\frac{\text{Total amount of remunerations}}{\text{Total amount of labor hours}}$ and machine-hour rate = $\frac{\text{Amortization of the machine for the specific year}}{\text{Installed Capacity of the machine in Hours}}$

estimation of the man-hour rates. Moreover, for the fixed assets plan, DFI must provide an Excel template to the Project Management Office (PMO). Then PMO, with the monitoring function of every investment, sends the template to every organizational unit, which must be filled with the following information: new investments and corresponding amounts, the predicted date for the investments, the life-span of the equipment, and the installed capacity for each machine. DFI will then receive the final version of the filled templates from PMO, proceeding for the estimation of amortizations and consequently the machine-hours rates.

Some of the business areas – Security Printing Unit (UGF), Mint Unit (UMD), and UPB – have a specific department responsible for planning the required materials for the production. These departments create, directly on SAP, the Bills of Materials (i.e. all the components, such as raw materials and semi-products, that are incorporated in a final product) and Routings (i.e. the manufacturing processes that the product goes through until it becomes ready for sale) required to produce every product. Therefore, the SAP itself combines all the information about hourly rates, Bills of Materials, Routings, and future prices of components – estimated and inserted in SAP by DCP –, generating the standard costs for each product (interviewee 2). Drawing on this, the production costs can be estimated by multiplying those unit costs by the planned production in volume. Besides, the production miscellaneous costs can also be estimated, because SAP disintegrates the standard costs in different components where the unit cost for Production miscellaneous costs is also included. For the estimation of the cost of sales, it is important to notice that INCM is continuously revaluating the unit cost of stocks towards the most recent standard costs. For that reason, the cost of sales can be calculated by multiplying the standard costs by the units sold (interviewee 2).

In parallel, some business units (UGF and UMD) must analyse the Material Requirements Planning (MRP) data in SAP (strategy group, minimum lots, security inventories, types of supplies and external supplies) for the products predicted to be sold and evaluate whether

everything is coherent and make changes in case it is pertinent. After all these reviews by the planning departments, with the help of the system (SAP), DSI creates scenarios based on the planned sales' units, the Bills of Materials/Routings, and the future prices of the components. The scenarios will automatically generate the consumption levels and the required purchases of components to fulfil the planned production, based on the forecasting sales and on the existing inventory of the company. With this information, DPC is able to estimate the value of the Cost of Merchandise Sold and Materials Consumed required for the income statement by FA. After the scenarios are created, they are sent to the planning departments to validate the data, leading to new scenarios in case mistakes are found.

Besides the production miscellaneous costs included in the standard costs, there are also other miscellaneous costs applied to cost objects (e.g. specialized jobs to the Citizen Card) and also to cost centres. Interviewee 2 discusses that to estimate these expenses, DPC is responsible for sending templates with the real data of the areas, in order for them to analyse and forecast for the forthcoming years. The real data represents the values between September-December of the previous year and between January-August of the current year. Then, a variant in SAP is created for each organizational unit with the extrapolation until the end of the current year by summing the values of the 4th quarter of the last year and the first three quarters of the current one (a linear extrapolation of the first three quarters is not done due to seasonality issues – most of costs are incurred in the last quarter). For the remaining two years of the triennium a predicted corresponding inflation rate is applied. Then each organizational unit must access the variants created by DPC and for each cost object/cost centre associated to its departments, the unit should analyse whether the forecasted values are truthful or not. In case it is required to make changes on the transactions, the organizational unit must indicate those changes in the excel template provided by DPC, in order to make those changes in SAP. Additionally, 'other operating expenses/revenues' are planned based on the historical values.

However, if the company expects new costs to be incurred or some adjustments on previous expenses, those values relied on the historical data will suffer amendments.

As soon as all the financial figures are predicted and inserted in SAP, both departments DPC and DFI will coordinate to prepare the final financial statements that must be inserted on SIRIEF⁷ by imposition of DGTF, usually by the end of November. Additionally, once PAO is approved by the board of directors, it must be sent to *Parpública*. INCM's planning process ends in the beginning of the following fiscal year with the overall approval of PAN.

Controlling

The controlling function started to be used when the Management Control Department – recently replaced by DPC – was inserted in the organizational structure in 2013, because the company considered crucial monitoring its operations through the planning function. Recently the shareholder started requesting a quarterly report that explains the reasons of the main variances verified by comparing the budgeted (PAO) with the actual results (interviewee 1). As the company is imposed on profitability targets from the shareholder, it is important to analyse how the results are going. Firstly, a prediction is done on whether the objectives are attained based on PAO, giving comfort to the shareholder. Therefore, with the actual results, the company must ensure that the objectives are attained in reality, since that is what the shareholder is expecting. Interviewee Besides this quarterly report, is done a monthly analysis on sales and production costs in a more detailed approach for internal purposes.

In terms of sales' variances, every month a report is executed by DPC. It compares, by business unit and by product, the actual revenues against both the homologous period and PAO. Therefore, the company is able to assess its situation timelier, and consequently to act quicker, knowing the fact that sales take an important role on company results. On the other hand, this kind of report is not done for the production costs. Instead, DPC is responsible for

⁷ System that collects economic and financial information

doing a variance analysis of the production orders through an Excel document. It highlights the transactions that have the highest variances, in both total amounts variances and standard cost variances. Variances are reported to the corresponding business units, which must evaluate whether it is due to either production issues or mistakes in the Routings/Bills of Materials. In case it is due to the latter, the units must proceed to the corrections.

The company mostly relies on the controlling function in order to take operating actions. For example, if there is an activity that is predicted to happen in a specific time and does not occur, the company should analyse the reasons. By doing so, corrective actions might be taken in order to speed up the process to further carry out the activity. This represents very well the function of controlling. By looking at the variances, causes are investigated, and actions are triggered to correct it. Considering this, budgeting works as a “red light” that warns if there is anything wrong in the accounts or if there is any business that should have already occurred, as a way to improve the operating performance of the company. These corrective actions are important in order to get the expected results (profit) that were presented to the shareholder. As it also occurs in private companies, the owner of INCM (*Parpública*) is expecting certain dividends based on what was previously planned.

However, there is no blaming action towards the employees (interviewee 1). This happens because there is no detailed budgetary control for each cost centre. There is only a macro control instead, which may lead to specific detailed analysis, but never for each cost centre.

Analysis of the Budgeting Process

As literature suggests, the budget should be integral part for the company to implement its strategy. As a matter of fact, the case company has a strategic alignment designed that aims to flow its strategy over the three distinct plans, to be further reflected into the collaborators' goals. Yet, interviewee 1 neglects the idea that the budget developed in INCM fully translates the company's strategy. Accordingly, the budget is only influenced by the targets established

towards the revenues turnover and lacks objectives to expenses constraints. Moreover, the strategy mostly covers items that cannot be executed with the budget.

One of the major criticisms discussed in the literature regards the time spent on budgetary procedures, keeping away managers from profitable work. The case company's managers did not mention any negative concern on this matter and interviewee 2 even enhances that the three-month spent on planning is reasonable. This interviewee believes that when the calendar for the planning process is drawn, all the tasks length, their timing and their dependence from each other is well organized and suitable to be accomplished. However, in practice, all the triggering process deviates from what has been scheduled. Thus, the interviewee suggests that more than the time consumed with the budgeting, the biggest issue is the lack of efficiency and effectiveness of all the agents involved. This collaborator stated that "when the involved employees receive the planning calendar, rarely perceive that the end date for the tasks is the time to be accomplished. Instead, it looks like that they to assume it as the start date."

Interviewees 3 and 4 mentioned that the tasks length established in the planning are reasonable, however due to the dependency from other tasks/departments, it might happen that their own tasks be delayed. Interviewee 2 discussed that the lack of commitment and incentive from several departments on planning is the main reason for the several delays on completing their tasks and also to subsequent changes (mainly in miscellaneous costs, revenues, and personnel costs planning) that must be done due to wrong planned values.

The excel template that is provided to the units for planning miscellaneous costs should only be filled with the figures that the areas consider to be different from those initially planned in SAP. However, many times, the units fill with amounts that should be reduced or increased in specific figures, rather than simply filling the desired final value for those transactions. Thus, it becomes a time-consuming process because DPC must get in touch with every single unit to understand their reasoning, in order to reach the final amount of those expenses. Moreover,

frequently, several units cannot differentiate between miscellaneous costs and fixed assets, ending up by assigning those expenses inversely. It leads for even more changes and, consequently, time spent. This time-consuming situation was much denoted in 2017, in which both the templates and the transaction in SAP were provided in the beginning of September 2017 and DPC only settled all the changes by the end of December. In fact, a process that is planned to take no more than one month, took almost four months.

In what concerns to the revenues planning, the most common issue regards mistakes when the business units insert the material codes into the excel template, since those are used in place of the materials' description. For example, during 2017, UGF sent several codes that regarded products from UMD. Other typical mistakes rely on sending negative amounts of quantities, as well as adding rows/columns to a template that is formatted in a way that should not suffer any modification. All those circumstances, leads to subsequent corrections and, therefore, to more time consumed than expected. Furthermore, every year (2017 was not exception), once the revenues are planned, the board of directors always aim for even higher amounts (conscious on the huge impact of the revenues in the income generated).

Finally, planning the personnel costs in 2017 took more time than in the previous years. The main causes were related to the “thawing” of diuturnities and career progressions in the Portuguese public sector, which were “frozen” since 2011. It led to several modifications on the total amount of those expenses, due to the continuous uncertainty on the governmental policies towards the national budgetary. Furthermore, it was also an atypical planning year for these labor costs, because the collaborator from DRH that was more involved in the previous' years budgeting process was not in the company because of health issues.

Interviewee 1 relied on the performance measurement model as one of the main causes for the lack of commitment by the managers on planning. Interviewee 1 believes that it is also important to use the controlling function as a performance measurement tool, as the literature

suggests, which creates more pressure to managers on achieving the forecasted results. It would lead to a more refined and reliable planning. Then, it is important to create a more detailed budgetary controlling, with a more periodic and detailed monitoring. Once this detailed budgetary controlling system is at stake, the compliance with what has been planned would be reflected in the objectives of the organizational unit. Interviewee 3 agreed that this procedure would have a great impact on the accuracy of the planning by the units, however interviewee 4 stated that the commitment of its specific department would remain the same, since they already put a lot of effort into it. Moreover, this more detailed controlling system would ease DPC on evaluating the variances more in-depth (interviewee 1). Interviewee 3 also mentioned that the controlling function executed by DPC, must be improved in order to provide the variances' analysis earlier. It was mentioned that sometimes it takes more than two months, making it more difficult for the areas to improve and adjust their operations.

Although INCM had not used any alternative budgeting method previously, the researcher considered important to assess the Beyond Budgeting system plausibility in INCM, due to its relevance in the literature nowadays; even if it is only to find improvements for the current system. The three main features of BB discussed in the literature were presented to the interviewee 1: (i) shift towards a more decentralized organizational structure with relative targets negotiated between top managers and first-line managers; (ii) abandon a fixed performance contract and move to a relative performance contract; (iii) in place of fixed annual budgets and plans, rely on trend analysis and rolling forecasts (usually quarterly) with repeatedly revised targets and goals.

The interviewee states that the company is becoming more decentralized over the years, with the operating objectives being proposed from the first-line managers to the board of directors. However, the organizational units still have to rely on the strategic targets designed by the board and the shareholder, as well as on the guidelines imposed by the government. For that

reason, the operating targets will always be subject to a strict revision by the top managers and further discussion with the areas. Although there is room for some objectives to not be directly linked with the strategic ones, the fully flexibility by the units will always be constrained while the company is state-owned. Moreover, in what regards to the performance contracts, the company is again stuck under governmental policies which define the wages for the public sector and whether can be afforded prizes and career progressions. Although the company rewards its employees with other means, such as days-off, it is not able to afford relative performance contracts. In the past, the interviewee could not precise when, the company was legally allowed to distribute a slice of the company's results to the employees based on their performance, but there is no prediction if it will happen again. Finally, concerning the fixed annual budget performed every year by the case company, there is no way for INCM to stop doing it, because it is a requirement from *Parpública*. However, not neglecting the annual budgeting, the interviewee looks favorably towards the implementation, in the short-term, of a method with repeatedly revised targets and goals, as the rolling forecasting. In fact, in addition to the annual budget, *Parpública* does not object for updated and more reliable forecasts over the following fiscal year. The interviewee believes that this rolling forecast would be useful, for example, to caution the company for extraordinary expenses not previously predicted. On the other hand, it was also mentioned in this interview that while the company solely relies on SAP as the only management tool for planning, there are no conditions to move for a new method. In fact, every interviewee agreed that SAP is still not the best instrument to be used. Therefore, within the overall process of budgeting, the major problem is not the system itself, but the tool that has been used. The major criticisms denoted in the interviews towards this tool are: time-consumption, several limitations on providing information (for example, the fact that the standard costs can only be achieved after the cost of sales is computed), and unintuitive for people with lack of training.

V. CONCLUSIONS

The main purpose of this research was to analyse the current budgeting system at *Imprensa Nacional-Casa da Moeda* and whether it could be improved to suit better the company's needs. Although its budget is prepared annually and the company relies on fixed performance contracts, it cannot be defined as traditional budgeting. In fact, the company's structure is not totally centralized, since the organizational units have the flexibility to suggest their own operating objectives, even though those will always be subject of analysis by the board of directors in order to meet the strategic objectives and the governmental guidelines. Since the company is highly constrained by governmental rules regarding its budgeting procedures, it is difficult to challenge or change it. However, by interviewing some of the people more involved in the process and through direct observation, it became clear that the current system could be improved within the boundaries of being a public limited company. Those improvements can be divided into three major features: (i) the introduction of rolling forecasts, apart from the annual budgeting, to plan closer to reality; (ii) the development of a more detailed financial control that would help not only on assessing the variances in a more meticulous way (aimed to improve the company's operation), but also to better measure the performance of the managers and staff; and (iii) the introduction of complementary management tools to SAP, in order to help every organizational unit not only to ease the planning process, but also to help them managing their operations.

This WP revealed potential further research subjects within the company itself and in a more generalized context. This case-study revealed several issues on the case company budgeting, with some of them related to the fact that INCM is a public limited company. Thus, the researcher suggests an interventionist research towards the improvement of the overall budgeting process in INCM and a more theoretical research by comparing the budgeting process between state-owned and private companies in Portugal.

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